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FUN GEOPARK IN JEJU

Jeju 제주특별자치도
Jeju Special Self-Governing Province

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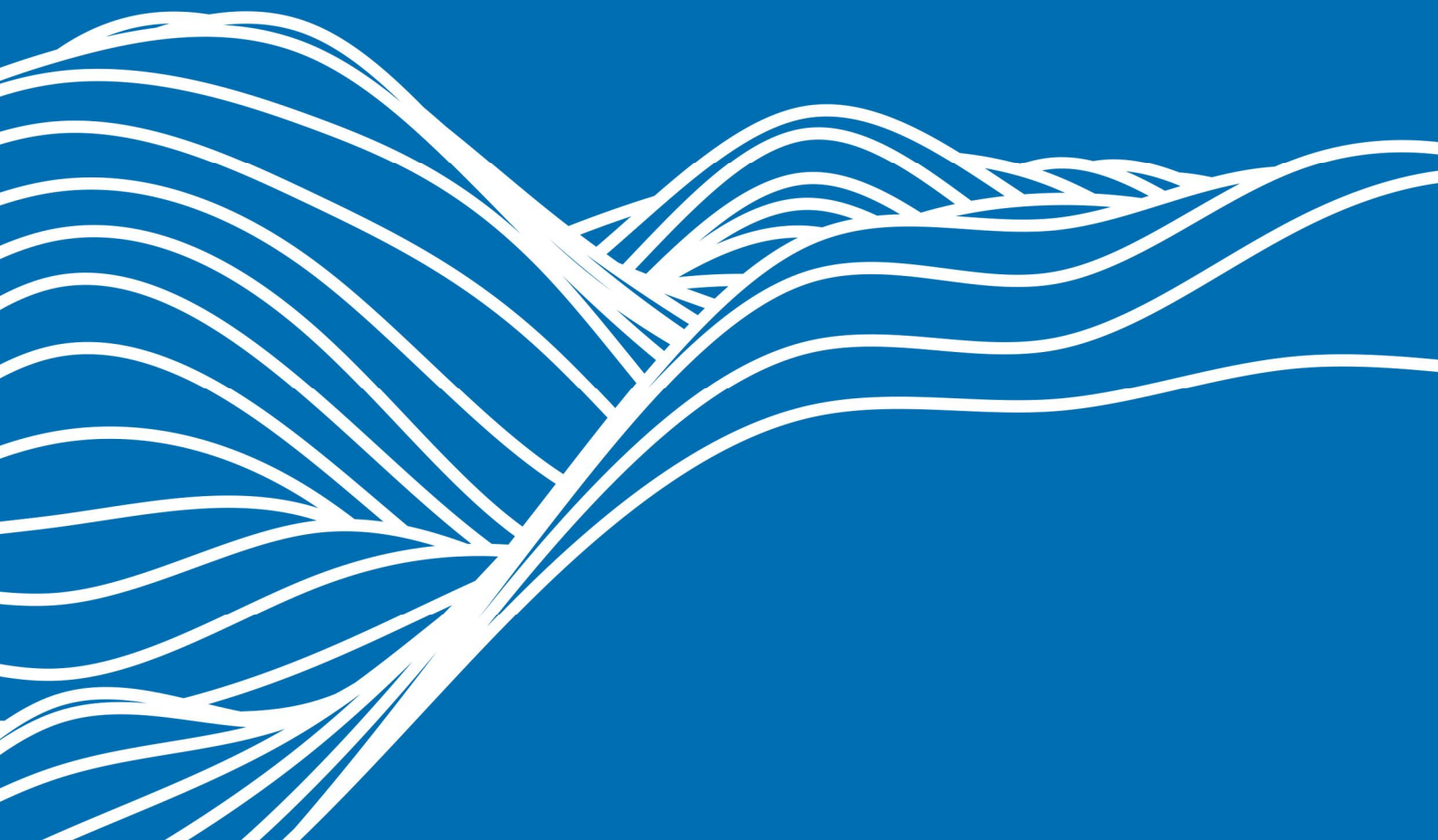
Poster



Shilin UGGp: A Perfect Example Of Geoconservation And Management

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Shilin UNESCO Global Geopark, covering an area of 350 square kilometers, is located in southwestern China's Yunnan province. It is unrivalled in the multi-phase complexity of its evolution from Middle Permian to the present; it was once covered respectively by basalt lava and lacustrine red bed. The Geopark is therefore of great geological and gemorphological significance. Shilin preserves and displays all pinnacle-like karsts, almost every existing distinctive pinnacle karsts can be identified in the Geopark; it is regarded as a great natural wonder. In order to achieve sound conservation, much has been done since Shilin was designated as a Global Geopark in 2004: conservation legal framework has been enhanced and related regulations were implemented; Shilin Global Geopark Administrative Bureau was officially established and responsible for the unified management of the Geopark; Mater Plan has been conducted to reinforce geoconservation; the Geopark is defined with clear boundary and size, zones for different function; Shilin Research Center was established and 1% of the revenue is allocated as research fund and carry out scientific projects every year; got local community involved in protection; a series of conservation programs have been carried out such as digital management system, geographic information system (GIS), ecological environment recovery, soil and water conservation, infrastructure construction, data of geological heritage in protected areas and so on. These measures and unremitting efforts lead to effective protection and sustainable development of the Geopark.

Keywords: Shilin, Geopark, Geoconservation

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Summary Report for UNESCO Network of Geoparks (Shilin) by the Ministry of Land & Resources of the People's Republic of China (2003)

Outcropping of Oyster Fossil in Aghajari Formation of Qeshm Island and Its Utilization as a Kalingi Mountain Geosite in Qeshm Global Geopark

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With the retreat of the sea, the sedimentary environment of Qeshm Island has changed from sea to land and deltaic, river and flood deposits cover its surface. It can be seen in most parts of the island. The geosite of Mount Kalingi is not very high and is covered with oyster-type bivalve mussels, which are interesting due to the accumulation of oysters of these creatures in very high density.The density of oysters in these hills has been so high that it has completely covered the ground with oysters and changed the color of the outcrop to white. The area covered covers over 150 hectares.Residents of Diristan village in the southeast of the island and west of Qeshm city have discovered this phenomenon and called the hills "Kalingi Mountain".The word Kaling in the dialect of the people of Qeshm Island means oyster and this name has been given to this mountain due to the excessive abundance of bivalve oysters. From a geological point of view, the whole area of Qeshm Island in this part includes the outcrop of Aghajari Formation to Pliocene age. Now, if the environmental conditions are such that a large number of fossil remains are gathered together, it is called a rock or Lumachel layer. The word consists of two parts, Loamy Shell, which means oyster soil. This geosite, which has recently been added to the list of Qeshm Global Geoparks, in addition to its geological and paleontological value, is important in terms of educational, research and scientific activities and can be noticed by a large number of domestic and foreign visitors.

Keywords: Qeshm Island, Geopark, Mount Kalingi Geosite, Oyster, fossil

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Geoconservation in the Estrela UNESCO Global Geopark

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Geoconservation is one of the key areas of a UNESCO Global Geopark. From the preservation and valorisation of geological heritage it is possible to promote the sustainable development of these territories, which represent important strategies for the 21st century. In the Estrela UNESCO Global Geopark, Geoconservation is based on a holistic approach which allows, in a clear and transversal way, to promote the preservation, interpretation and valorisation of the unique geological heritage of this territory, focusing on two areas of action: a) Interpretation and Valorisation and b) Monitoring, Conservation and Protection. With regard to the Interpretation and Valorisation of geological heritage, the actions have been directed towards broadening its interpretation, as well as raising awareness for its preservation and protection. Examples of initiatives are the continuous implementation of interpretative structures, the work with the populations in the inventory of new geosites and the dissemination and awareness-raising among schools and the rest of the community. For the Monitoring, Conservation and Protection of geological heritage, efforts have been promoted in partnership with local agents, with the monitorization and improvement of accessibilities to geosites. Its protection has also been worked with these stakeholders, through the classification of sites in the Municipal Master Plans, thus ensuring a protection status for geosites. Finally, the research in partnership with several Universities has allowed the monitorization of geological heritage with new and innovative technologies. In the light of the above, and one year after the classification of this territory by UNESCO, there have been various challenges but also opportunities for Geoconservation in the territory, and it can be clearly seen that the various initiatives undertaken in the territory have contributed to put the geological heritage back at the centre of priorities.

Keywords: Geopark, Geoconservation, Preservations, Valorization

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Loureiro F., Castro E,. (2021) , Geoconservation in the Estrela UNESCO Global Geopark

A Study of Characteristics and Geological Significance of Geoheritage Resources in Arxan UNESCO Global Geopark, Inner Mongolia, China

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Arxan UNESCO Global Geopark is a comprehensive geopark mainly represented by volcanic landforms and hot spring landscapes. In this paper, based on the geological survey and evaluation of the geoheritage, the authors divided the geoheritage resources into 2 categories, 7 types, 9 subtypes and 47 kinds. Additionally, the authors analyzed the characteristics of various geoheritage, compared and summarized previous studies, and discussed the important geotourism significance of the geoheritage of Arxan Geopark. Studies have shown that the geoheritage of Arxan Geopark have important scientific value in the fields of geomorphology, hydrogeology and geotourism, and provide a scientific reference for the sustainable development of the geoheritage of Arxan Geopark.

Keywords: geoheritage, geological significance, UNESCO Global Geopark, Arxan

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Population of Wreathed Hornbills in the Ciletuh-Palabuanratu UNESCO Global Geopark.

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The Wreathed Hornbill (Rhycticeros undulatus) is a species of bird from the hornbill family (Bucerotidae). Its distribution is very wide, starting from South Butan, East India, Southwest China, Southeast Asia and Peninsular Malaysia. In Indonesia, the Wreathed Hornbill is spread over Kalimantan, Sumatra, Java and Bali (including several offshore islands). Despite its wide distribution, the Wreathed Hornbill is included in the IUCN Red List as "Vulnerable" and in Appendix II of CITES. In addition, the species is protected under the Indonesian Minister of Environment and Forestry Regulation No. P.106/MENLHK/SETJEN/ KUM.1/12/2018, Law No.5 of 1990 and Government Regulation No.7 of 1999. The Wreathed Hornbills has become quite rare in Java. Due to the species' rarity, the Environment Agency (DLH) of Sukabumi Regency initiated a Wreathed Hornbill survey in the Ciletuh-Pelabuhanratu UNESCO Global Geopark (CPUGGp). The CPUGGp is located in the western part of Sukabumi Regency, West Java Province. The determination of CPUGGp as a UNESCO Global Geopark in 2018 with a total area of 1,260 km2 (126,000 hectares). Its geographical location is at S06°46'07"; E106°31'34", and the altitude varies from sea level (0 m asl) along the west and south coasts, to 2,960 m asl. on the slopes of Mount Halimun-Salak in the north. The implementation of this survey involved the Cikananga Wildlife Center (YCKT), the local NGO PAPSI, the BBKSDA of West Java, and the local community wardens of the Cikepuh conservation area. The survey lasted from February to March 2021. The main objectives of this survey were to: 1) Verify the continued survival of the Wreathed Hornbill in the GGUCp area; 2) Collect knowledge about the spatial distribution of the species in the GGUCp area; 3) To collect knowledge about suitable habitats for the species; 4) To collect knowledge about population size, or number of individuals, 5) To increase knowledge about Sex-ratio (balance between the number of males and females); and 6) To identificy locations for future (long-term) reintroduction or restocking programs. The rediscovery of this rare Wreathed Hornbill population is very good news for conservation and a potential tourist attraction in the CPUGGp. On the other hand, it is necessary to immediately raise awareness and safeguard the Wreathed Hornbill habitats within the CPUGGp. In an effort to restore the Wreathed Hornbill population in CPUGGp, it is also necessary to release new individuals to genetically enrich this wild Wreathed Hornbill population.

Keywords: Ciletuh Palabuhanratu UGGp, Wreathed Hornbill, Rhycticeros undulatus, Biodiversity

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Reference:

Indonesian Minister of Environment and Forestry Regulation No. P.106/MENLHK/SETJEN/KUM.1/12/2018Law No.5 of 1990

The Vikos-Aoos Geopark in Greece: Recent Advances in Geoscientific Research

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The Vikos-Aoos Geopark is located at the northwestern part of the Pindus Mountain Range at the Region of Epirus, northwest Greece. Since 2010, it is part of the European and Global Geopark Networks of UNESCO. The Geopark extends in an area of 1,200 km2 near the Greek-Albanian border also covering a large area of the Northern Pindus National Park. The area is characterized by a mountainous and rugged terrain, which is interrupted by steep gorges, elongated narrow valleys, and alluvial plains. Smolikas (Geros peak: 2,637 m asl) and Tymfi (Gamila peak: 2,497 m asl) Mountains host the highest peaks of the Geopark, while Vikos and Aoos Gorges, and Konitsa plain are ascribed to the lower relief morphology (Chatzipetros & Stergiou 2016). Besides the geological, geomorphological and natural aspects, distinct cultural aspects also characterize the Vikos-Aoos Geopark. Sixty-one traditional settlements, culturally and architecturally protected, are located within the Geopark and form the municipalities of Zagori and Konitsa. In this publication, we present a review of some of the recent advances in geoscientific research regarding the Vikos-Aoos Geopark. The Gamila peak spherical concretions were first described by Telbisz et al. (2019). They are found on the pathway (approximately at 2,100 m a.s.l.) to Gamila peak. They have spherical to elongated elliptical shapes (0.10 to 1 m in diameter) and concentric zones. Telbisz et al. (2019) suggest that their diagenesis was characterized by an early and imperfect carbonate cementation and by a simultaneous massive precipitation of SiO2 in the intergranular space. The dissolution of siliceous bioclasts could be assumed as the major producer and supplier of SiO2-rich solutions resulting in silicification, however other external fluids enriched in SiO2 could not be excluded (Telbisz et al. 2019). The Boila Rockshelter is located at the edge of the Voidomatis river valley. The site was in use for around 4000 years (14,000 to 9,500 BP, Elefanti et al. 2021). The geoarchaeological investigation documented that black chert from the Vigla limestone outcrops found in Vikos gorge was extensively implemented by the inhabitants of the rockshelter in tool making. Red and reddish-brown chert from central and coastal Epirus was also in use. The study held by Elefanti et al. (2021) suggests the deliberate selection of the most suitable local chert, changes in the scale of settlement and mobility, and a gradual emphasis on the manufacture and repair of hunting gear during the Late Upper Paleolithic and Early Mesolithic. The researchers state that "high mountain hubs such as the Tymfi and drainage systems like the Voidomatis and Aoos provide clues in the same way as coastal environments do; to the ways and rhythms through which human societies negotiated palaeoecological and other changes during the critical final phase of hunting and gathering before the advent of the Neolithic" (Elefanti et al. 2021).

Keywords: Vikos-Aoos Geopark, Tymfi, concretions, geoarchaeology, Epirus

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The Mikuma Shrine, one of the geosite of the San'in Kaigan Geopark, was born from columnar joints of basalt

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The basalt with horizon joint occurs in the precincts of Mikuma Shrine in the San'in Kaigan Geopark. This study is a summary of what the columnar joints of the Mikuma Shrine brought about to the people living in the area, based on literature surveys and interviews. The results of the investigation showed that the basalt with columnar joint was formed by the intrusion of magma about 5 million years ago. This horizontal columnar joint brought blessings to the local people as a stone material, and since it looks like a staircase extending to the heavens, it is also thought that the bridge legend (Japanese mythology) was born and became the object of worship and shrine. Legends also exist in the columnar joints of neighboring basalts, and it was possible to show how geological phenomena were connected to people's lives.

Keywords: San'in Kaigan Geopark, basalt, Japanese mythology

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google maps ＷＥＢ地理院地図吉岡温泉案内（大正三年六月十五日） 吉岡温泉事務所発行裏日本(大正四年 12 月 15 日発行）
久保邦武 著気高群末垣村史（昭和 4 年） 田中久秋 著因幡誌上下（明治 37 年） 安部惟親（恭庵）著 因伯業書因幡誌巻四、巻七（大正 8 年） 安部惟親著

Geodiversity & Geological Value of Yeoncheon Geosites on Hantangang Geopark: the Current Status and Future Research Direction

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Hantangang River Geopark is located in the central part of the Korean Peninsula and in the border area between South Korea and North Korea. Due to the environments of the DMZ(De-Militarized Zone), military protected areas have been established in several places, which is a border area, so geological studies and investigations have been conducted in limited area. However, many geosites that were not reported in detail during the preparation process of the geopark were rediscovered.Hantangang River Geopark is the only geopark in Korea with unique geology and topography developed around inland rivers. In particular, the Imjingang belt, which can be an indicator of the plate tectonic history in East Asia, has been developed around Yeoncheon. In addition, there is a dynamic and rare geoheritage where pillow lava formed in the river. As described above, the DMZ, the world's only divided area(nation), has brought lack of research and investigation project. However, it is currently attracting the attention of not only academia but also the general public as it has certified it as a Global Geopark by UNESCO. Currently, basic research has been conducted through the acquisition of drilling cores, and further research is being actively conducted in various topics. Research in six topics, including petrology, hydrogeology, and sedimentology, etc. is in progress while tracking the connection with the unique geology and topography of the Hantangang River Geopark, which will be briefly introduced here.

Keywords: Hantangang, Yeoncheon, Imjingang Belt, Pillow Lava, DMZ

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